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NOTES ON THE SOURCES OF THE PEACE RIVER, BRITISH COLUMBIA

By FREDERICK K. VREELAND

(Map facing p. 24)

On the official government maps of British Columbia there are considerable areas of blank white paper surrounding the head waters of the Mackenzie River. The principal tributaries of the Mackenzie from the west, namely the Liard, the Peace and the Athabaska Rivers have their source in a rugged pile of mountains which constitute the northern end of the backbone of the Rockies. Of these three tributaries, the Peace River is particularly interesting, because it performs the noteworthy feat of rising on the western side of the mountains in a great trough-like valley, whence it makes its escape by cutting a deep gorge clean across the range, through which it flows eastward to the great plateau.

This extraordinary work of nature was discovered and described by Alexander Mackenzie on his historic journey across the continent to the Pacific, in 1792-3¹. Selwyn followed in 1875²; and Dawson in 1879 mapped the valleys of the Parsnip and Peace Rivers³. On Dawson's map appears the notation "rugged mountains tipped with snow in August"; and he made a reconnaissance into the more accessible portion of the range, traversing the Pine River Pass, south of the Peace River.

In later years McConnell⁴ and Robertson⁵, Canadian geologists,

¹ Alexander Mackenzie: "Voyages ——" London, 1801.

² Alfred R. C. Selwyn: Report on Explorations in British Columbia, *Report of Progress, Geol. Surv. of Canada, 1875-6*.

³ George M. Dawson: Report on an Exploration from Port Simpson on the Pacific Coast to Edmonton on the Saskatchewan, Embracing a Portion of the Northern Part of British Columbia and the Peace River Country, *Report of Progress, Geol. Surv. of Canada, 1879-80*.

⁴ R. G. McConnell: Report on an Exploration of the Finlay and Omineca Rivers, *Annual Report, Geol. Surv. of Canada, Vol. VII, 1894*.

⁵ Wm. Fleet Robertson: Essington to Edmonton, *Report of Minister of Mines of British Columbia, 1906*, pp. 101-131.

have explored the Peace River and its principal tributaries, making geological studies of the valleys and adjacent mountain slopes; but little has been done in the mountains. The range is so rugged that travel is difficult, and, because of the remoteness of the region, a summer season is all too short for a serious exploration. E. A. Preble of the U. S. Biological Survey traveled overland from Telegraph Creek to Fort Grahame in 1910, with the intention of crossing Laurier Pass, but was forced by the lateness of the season to give up that part of the trip and descend the Finlay and Peace Rivers.

In 1912 the new transcontinental railroad reached the head of

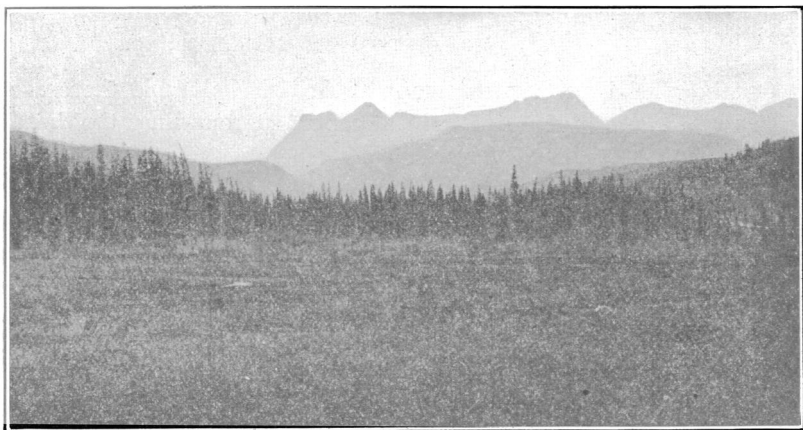


FIG. 1.—The eastern approach to Yellowhead Pass follows a gradual slope in the valley of the Athabaska and Miette.

navigation on the Fraser River, which approaches the southern source of the Peace River, thus opening an easier approach by water. Grasping this opportunity, I undertook, with Mr. W. F. Patterson of New York, to study that part of the range which lies north of the Peace River, in the vicinity of Laurier Pass. The objects of the trip were mainly biological. This region was chosen particularly in the hope of throwing light on the problem of the mountain sheep and of determining, if possible, whether the northern "black sheep" (*Ovis Stonei*) is consistently distinct from its more southern neighbor, the "bighorn" (*Ovis Canadensis*), or whether the two species intergrade.

With a commission from the U. S. Biological Survey to collect specimens for the National Museum and a permit kindly furnished by the Provincial Museum of British Columbia authorizing this

work, our hands were more than full; hence the opportunities for geographical work were limited. We did, however, take such simple observations as were necessary to plot our route with a fair degree of approximation and to locate the principal mountain peaks by cross bearings (see footnotes 8 and 9). The results are shown on the attached map.⁶

Itinerary. The route chosen to reach these mountains was as follows: Leaving Edmonton, Alberta, we proceeded westward by



FIG. 2—The Fraser River 47 miles from the summit of Yellowhead Pass, just before it emerges from the steep water-cut valley into the great preglacial trough, which is seen in the distance. Looking west.

the new Grand Trunk Pacific Railroad⁷ as far as the end of the steel, twenty-eight miles beyond Yellowhead Pass. From Mile 28 on the railroad our outfit was hauled twenty miles by wagon down

⁶ Besides the author's observations the following sources were used in the compilation of the map:

Dawson: Map of Northern British Columbia and the Peace River Country, 1:506,880. Sheet II. *Rept. Geol. Surv. Canada, 1879-80.*

McConnell: Map of Finlay and Omineca Rivers, B.C., 1:506,880. *ibid.*, N. S., Vol. VII, 1894.

Lafferty and Tobin: Map Showing Route from Edmonton to Yukon River as followed by a Party of North-West Mounted Police under command of Insp. J. D. Moodie. 1:675,840. *Rept. North-West Mounted Police, 1898.*

Map of Peace River Block, 1:506,880. Accompanies "Description of Surveyed Townships in the Peace River District." Topogr. Surveys Branch, Ottawa, 1913.

Pre-Emptor's Map: Peace River Sheet, 1:253,830. B. C. Dept. of Lands, 1913.

⁷ We are indebted to the officials of this railroad for carrying our canoe and outfit on a construction train, and for marked courtesies and material assistance at the start of the journey.

4 *Notes on the Sources of the Peace River, British Columbia*

the west side of the pass to Mile 48, five miles above Tête Jaune Cache. There the canoe was launched, July 13th, 1912, and we proceeded down the Fraser River to the point where it turns south, above Fort George. Here the Giscome Portage brought us to Summit Lake, the southernmost source of the Peace River. Then we followed the Crooked, Pack and Parsnip Rivers northward to the junction of the Parsnip and Finlay, forming the Peace River, which was followed through the gorge above mentioned to the Mountain-of-Rocks Portage above Hudson's Hope. Here we secured horses and pack outfit for the journey in the mountains to the northwest. Returning to Hudson's Hope, we proceeded by canoe down the Peace River to Peace River Crossing, thence over-



Fig. 3—A break in the southwest wall of the trough, showing high mountains near the source of Castle Creek.

land to Lesser Slave Lake, then down the Slave and Athabaska Rivers to Athabaska Landing, which point had just been reached by a new railroad. The entire circuit from railroad to railroad is approximately fourteen hundred miles, and the trip occupied three months' time.

The Fraser River. A noteworthy feature of the Rocky Mountain region in British Columbia is the broad trough which follows the mountain range, and in which flows a succession of rivers, some northwesterly and some southeasterly. This trough was evidently the bed of a great river in preglacial times, but the subsequent accumulations of morainic material have divided it into half a dozen different watersheds. South of the Yellowhead Pass the trough is occupied by the Canoe River, flowing southeast into the Columbia

River, which it meets, coming in the opposite direction, at the Big Bend. North of Yellowhead Pass it is occupied by a small tributary of the Fraser, and finally by the Fraser River itself, flowing north-west. The principal source of the Fraser, however, rises near the summit of the pass and plunges through a narrow water-cut valley, passing near the base of Mt. Robson, the highest known peak in Canada (13,700 feet), and finally flowing out into the pre-glacial trough at Tête Jaune Cache (Fig. 2).

The descent from Yellowhead Pass to the great trough is steep and rugged, in marked contrast with the gradual approach to the pass from the east by a broad, open valley (Fig. 1). From Mile

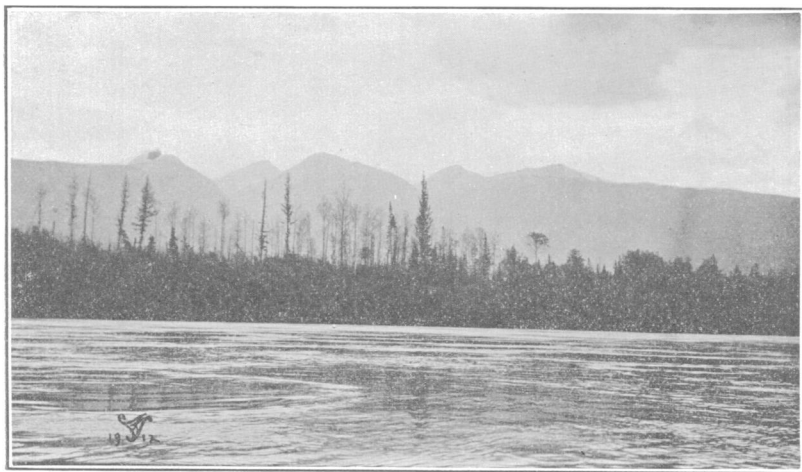


FIG. 4—The Fraser River below Castle Creek looking southwest across the level bottom of the great trough to the wall of the mountains. The foreground is recently burned.

28, below Moose Lake, to Mile 48, five miles above Tête Jaune Cache, the river drops about one thousand feet, through a series of rapids and cataracts which make canoe travel impracticable. Below Mile 48, the river is navigable for canoes, and, although turbulent and full of whirlpools, there is nothing of serious moment until the Goat Rapids are reached, below the mouth of Goat Creek. These may be run in safety at ordinary stages of the water. The next obstacle is at the "Grand Canyon." This is in two parts. The upper canyon proved impracticable for a heavily loaded canoe and was portaged, but the lower canyon was run without mishap, though a whirlpool forming unexpectedly caused some excitement.

Between Tête Jaune Cache and the Grand Canyon the river

follows a very tortuous course through the alluvial bottom of the great trough. The bottom is from three to five miles wide and is flanked by fairly high mountains, with rugged snow peaks visible through the gaps (Figs. 3 and 4). Through this bottom the river swings from side to side of the trough, cutting in places steep banks, sometimes fifty to one hundred feet or more high, of stratified rock-powder flaked with mica, in which thousands of bank swallows make their nests. The eroded material fills the river with a gray, glistening silt, and forms ever-shifting bars over which the river whirls and boils like a seething cauldron. As the river flows north and westward, the mountains become lower and recede until finally, at the canyon, they cease entirely on the southwest bank and continue

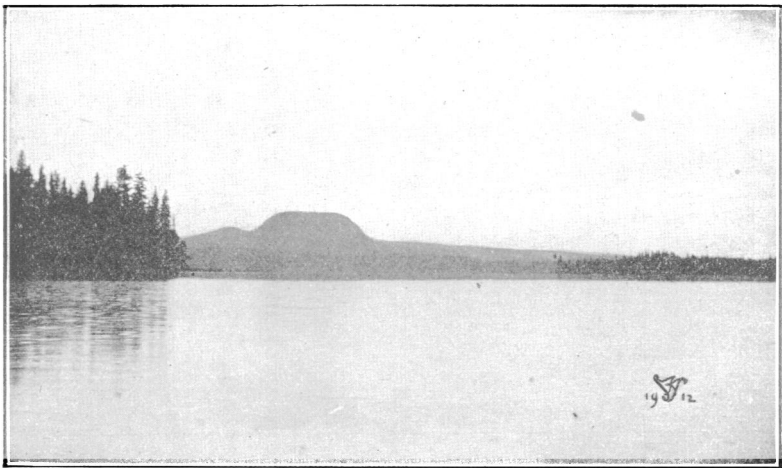


FIG. 5—Summit Lake looking northwest. The little knob (locally known as Teakettle Mountain), which marks the beginning of the Crooked River, is the only break visible on the surface of the interior plateau.

only a little farther on the northeast shore. At the canyon the alluvial bottom of the trough gives place to a rock ledge through which the river has cut a narrow gorge, finally emerging into a great area of wooded hills and bottom lands, which continue beyond the point where we left the river, at Giscome Portage. Here the river makes a great bend to the south and plunges into a series of rapids which obstruct navigation above Fort George.

The valley of the upper Fraser River is forested throughout. Great havoc, however, has been wrought by the railroad construction crews, who start fires to clear the right-of-way and allow them to spread over the whole mountain side. As far as the active work

has proceeded, these burnings are not the exception, but the rule, and the destruction of fine forest is appalling. I understand the fault lies mainly with the contractors, and that steps have been taken to check their depredations. This is highly desirable since the Fraser valley contains much very fine timber, and its burning means not only great pecuniary loss, but the ruining of a scenic route whose value would be immeasurably greater if it were not marred by blackened skeletons of trees.

Above Tête Jaune Cache and on the mountain sides the forests are mainly of spruce and lodgepole pine. In the river bottom there is a fine mixed forest (where not burned) of birches (*Betula papyrifera*), large cottonwoods (*Populus balsamifera*), aspens,

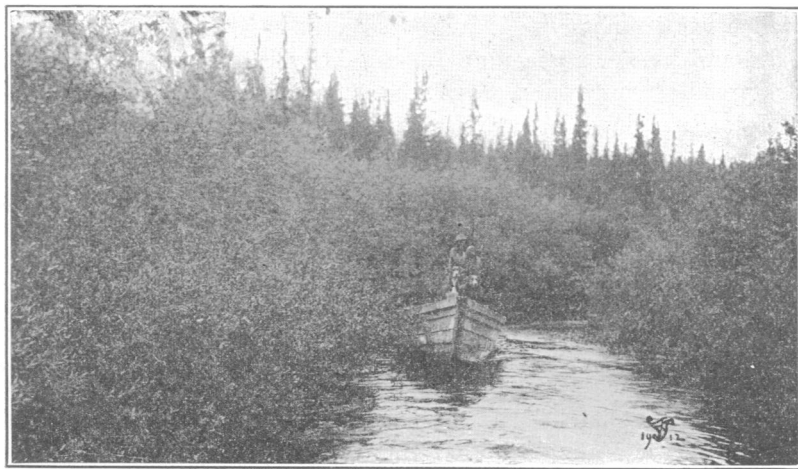


FIG. 6—The Crooked River winds and twists between boggy shores bordered by willows and alders.

spruces, some Douglas fir, balsam fir and cedar; alders growing to trees six and eight inches in diameter, and various willows. At the canyon we measured a cottonwood tree having a circumference of seventeen feet, breast high, and a spruce ten feet; at Goat Rapids a cedar sixteen feet, breast high. Below the Grand Canyon, as the mountains fall away, more aspens and birches appear, but there is also a good deal of fine spruce timber. Undergrowth, including the spiney "devil's club" (*Fatsia horrida*) is usually so dense as to discourage travel on foot.

The Crooked, Pack and Parsnip Rivers. At Giscome a seven mile portage leads over a ridge to Summit Lake, the source of the

Crooked River. This ridge, although only four hundred feet above the river, is nevertheless the divide between the Pacific watershed of the Fraser and the Arctic waters feeding the Peace River; and it marks a change in the aspect of the country quite incommensurate with its size.

Summit Lake (Fig. 5) is a placid body of clear, limpid water, in the midst of a broad plateau which extends as far as the eye can reach. The shores are flanked with dark spruces, and there is no landmark to break the severely level skyline but a little knob known as Teakettle Mountain, apparently of igneous rock, which guards the outlet of the lake and marks the beginning of the Crooked River.

The Crooked River (Fig. 6) is a little meandering stream which well earns its name as it wriggles on its erratic way; sometimes calm and placid, again plunging suddenly into a miniature rapid or spreading out over a gravel bed. At first the shores are boggy and bordered by willows and alders. The mountains are far away, and the occasional hills that break the monotony of the landscape are of gravel, or glacial detritus. As the hills grow higher they are covered with a fine coniferous growth—spruce, balsam fir and a few Douglas fir. In places there are gravel banks grown with lodgepole pines, many of which are conspicuously marked with scars made by the Indians, who strip the bark for the purpose of collecting sap for food in the spring.

At McLeod Lake a spruce-clad ridge appears on the east shore, and on the flat land below the lake the first cottonwoods observed on the Arctic watershed were found. These cottonwoods are of great importance to the few Sikanni Indians who inhabit the region, since they furnish the material for dugout canoes, which the Indians fashion with great skill. Some of these canoes are thirty to forty feet long and are remarkably light, considering the crude method of their construction. With their long, narrow form they are admirably adapted to poling upstream against the swift current of the rivers. Near the confluence of the Pack and Parsnip Rivers, the cottonwoods largely replace the spruce, growing on banks of gravel and sand in which streaks of lignite appear (Fig. 7).

The Parsnip River is much larger than the Pack (as the outlet of McLeod Lake is called) and the brown bog waters of the latter are soon engulfed in the stronger stream, whose green color indicates its origin in the snow mountains. Here, for the first time, high mountains become visible to the north and east.

This confluence is noteworthy from the fact that when Alexander Mackenzie reached this point, going up stream, he chose the east fork, or Parsnip River, instead of the west, or Pack River, which we followed. He was thus led into a rugged tangle of mountains and suffered much hardship which might have been avoided if he had happened to choose the lower and easier route.

Below this point, the Parsnip River is a strong, full stream, flowing with a swift, but a fairly uniform current through a rolling country. With its northward progress it approaches nearer to the eastern range of mountains, of which we caught occasional glimpses through the fog and low-hanging clouds which hung over the valley for several days.

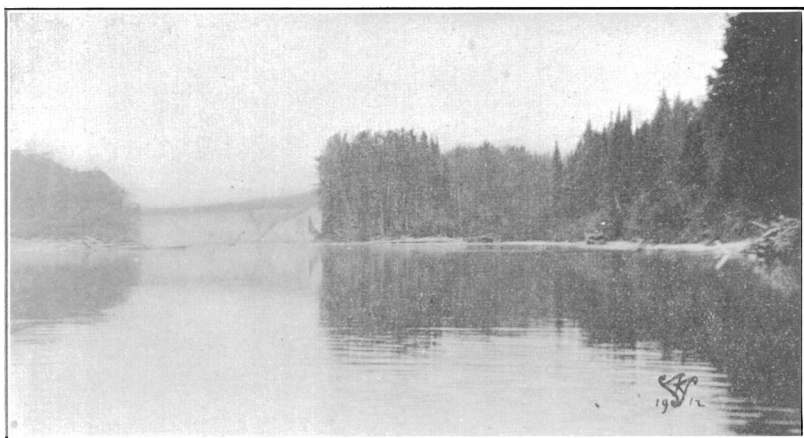


FIG. 7—Near the junction of the Pack and Parsnip Rivers, showing typical cottonwood growth on a gravel bar, and a cut bank beyond.

Three miles above the mouth of the Nation River, the first rock becomes visible in a limestone exposure, which has been sharply cut off by the river; and here we jumped into a series of vigorous rapids—not rough enough to be alarming, but very acceptable after the long stretches of shoal water obstructed by gravel bars, through which we had passed.

The river then pursues a somewhat meandering course, cutting its way frequently between steep banks which suggest those of the Fraser River, although here they are of coarse sand and gravel. The eroded material has been deposited in the river bed, forming numerous islands, some of them a mile or two long, which frequently divide the stream into several branches. These islands are continu-

ally shifting. In some places, no less than four distinct growths of cottonwoods of various ages mark the water lines of successive flood seasons. The river bed evidently has changed materially since Dawson's exploration, the main channel sometimes passing around an island where he shows only a narrow by-pass or even a peninsula, so that it is difficult to recognize the landmarks noted on his map. Consequently, we were quite taken by surprise when we met, almost head on, the strong current of the Finlay River, flowing down from the northwest through a broad valley flanked on both sides by mountains.

The two streams mingle in a boiling, tumbling rapid half a mile below their confluence, and even at this distance the roar of waters



FIG. 8.—Mt. Selwyn from the Peace River below Finlay Rapids, looking S. 41° E. The river swings to the right, passing close to the precipitous north face of the mountains.

gives ample warning of trouble ahead. Thus the Peace River is formed.

Mt. Selwyn and the Upper Peace River. The body of the river flows to the south of an island in a smother of great swells. Close to the south bank, however, one may pick a channel by which a canoe can be let down in safety. In a light canoe this channel might have been run with care, but with our heavy load we considered it wiser to line the canoe down, especially as the river broadens out below the rapid in a huge eddy which might easily cause trouble. At high water this is doubtless a dangerous whirlpool.

Below the rapids the river sweeps on with a steady, majestic flow,

bearing us swiftly toward the gap in the mountains, which is guarded by Mt. Selwyn—a fine peak rising abruptly from the south bank of the river. A clear, cold stream drains the western slope of the mountain and at its mouth we beached our canoe and cached our outfit, well out of reach of inquisitive bears and porcupines, taking on our backs light packs with four days' provisions for a reconnaissance of Mt. Selwyn and its neighboring peaks.

Mt. Selwyn (Fig. 8) is the apex of a rugged escarpment running approximately northwest and southeast, very precipitous on the northeast side, where it drops off into a valley separating it from

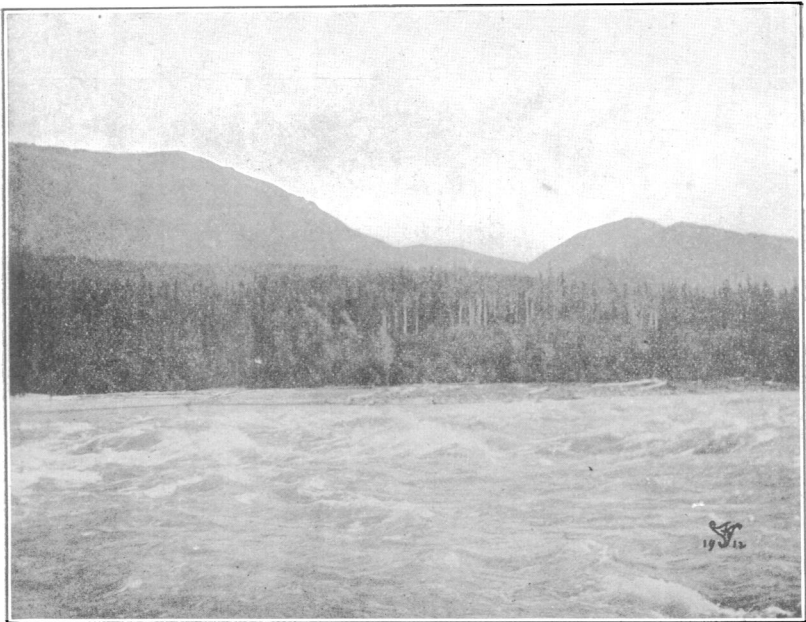


FIG. 9—The Parle Pas Rapids, Peace River, showing the wooded bottom land and rounded hills on the south bank.

a broader chain of mountains farther east. On the southwest side the slope is more gradual and is cut into numerous glacial basins, feeding the stream before mentioned. There are three main peaks, the one next the river being the lowest and the third the highest—approximately 7,500 feet.

Climbing is rendered difficult by a tangle of down timber, resulting from a fire which swept the whole mountain side, apparently twenty years or more ago. This tangle is growing up with aspens

and lodgepole pines to an altitude of 4,500 feet, although the remains of the former spruce growth continue up to 5,200 feet.⁸

We intended to camp about tree-line, but we found that the snow on the southwest slope was all melted and the mass of quartz rock, of which the mountain is largely composed, afforded no water. Hence we were forced to descend to the western valley for the night. The next day, however, we found a glacial basin a mile or so farther south, containing a pure emerald pool at 5,200 feet where we made our camp while on the mountain. At this altitude there was just enough scrub for a meager fire.

We had hoped to find traces of mountain sheep in these mountains and perhaps secure specimens by which we could determine

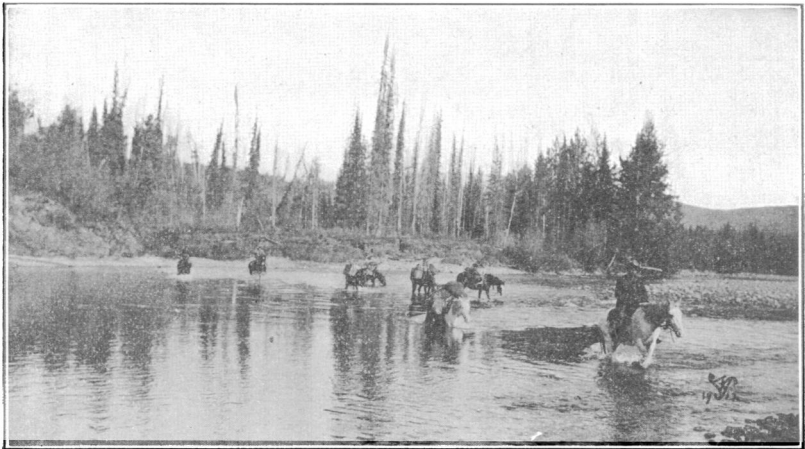


FIG. 10—Fording the southwest branch of the Halfway River. The northwest branch flows behind the ridge seen in the distance.

what species is found south of the Peace River, but in this we were disappointed. We were well repaid, however, by the outlook obtained over the valleys of the Peace and Finlay Rivers, and the range of mountains to the northward toward which we were journeying.

⁸ All altitudes were determined by aneroid, using as data Dawson's records of 2,000 feet for the Peace River at Mt. Selwyn and 1,522 feet at Hudson's Hope. Continuous travel made it impossible to take simultaneous readings at a datum point, but corrections for barometric variation were made as accurately as possible by comparison of night and morning readings. No hypsometer readings were taken, but the two aneroids used were in good agreement. One of them was calibrated by the U. S. Bureau of Standards on our return and the observations corrected accordingly.

In the dim distance, bearing N. 19° W.⁹ we could distinguish a great peak, which dominates everything in this direction. This peak appeared to lie in the vicinity of Laurier Pass, our objective point, so I took its bearing with considerable care and sketched its profile in the hope of identifying it later. Because of its three-toothed outline, we called it Trident Peak for purposes of identification; and this striking contour enabled us to locate it later.

Returning to the canoe we were carried, almost without effort, by the strong, swift current, through a mighty gorge flanked by mountain peaks which swept by like an ever-changing panorama; rising on the south shore precipitously, on the north shore with softer and more rounded outlines—a wonderfully impressive scene that beggars description.

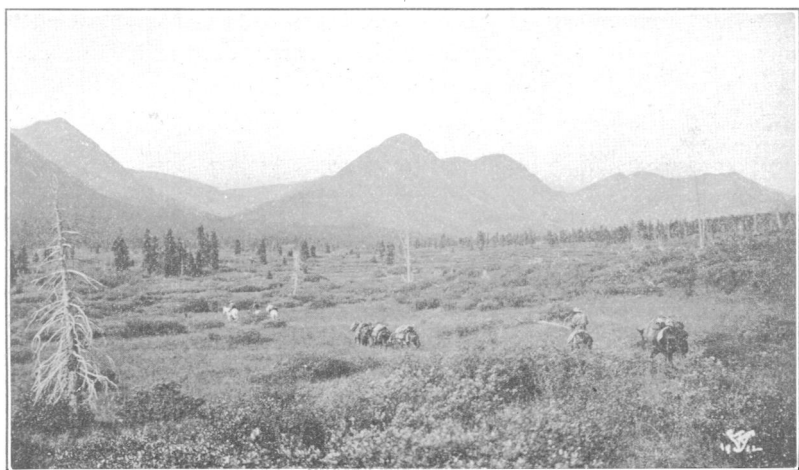


FIG. 11—The approach to Laurier Pass through the valley of Cypress Creek—about 4,500 feet. Timber-line is visible on the mountains about 500 feet higher.

The first day's run carried us beyond the mountains and through the Parle Pas Rapids—the second serious obstruction to the Peace River, which is formed by a ledge over which the river plunges, extending almost across the river bed (Fig. 9). On the north shore this ledge is broken, thus affording a channel through which a canoe may be taken with care.

Below the rapids the river traverses an area of foot hills, which

⁹ All bearings are referred to the true meridian as determined in the valley of the Halfway River by an observation of Polaris, duly corrected for azimuth. The compass variation thus found, 39° E., has been used to reduce the compass bearings. The compass, with folding sights, was read to the nearest degree on a $2\frac{1}{4}$ inch circle.

are steep and practically devoid of timber on the north side. For the most part they are covered with a short herbaceous growth in which a species of *Artemisia* is conspicuous, although there are some bold headlands of sedimentary rock with almost horizontal strata. Frequent exposures of coal or lignite are seen.

The south shore, however, is conspicuously different. The hills are rounded and spruce-grown, and are often separated from the river by a mile or two of bottom land.

The second day brought us to the Mountain-of-Rocks Canyon—a narrow gorge cut by the river around the flank of a rock knob that obstructed its course. This canyon forms a horse-shoe about twenty-five miles long in which the river drops 275 feet, being entirely impassable. A portage fourteen miles long connects the horns of the horse-shoe, with the old Hudson's Bay post of Hudson's Hope at its lower end. Here we obtained horses and pack outfit for the journey to the mountains. With two packers our party was now increased to four.¹⁰

The Halfway River, Laurier Pass and the Mountains. From Hudson's Hope our course lay northward, crossing the 1,640 foot wooded terrace which flanks the river and climbing 600 feet higher, to an open plateau sloping gradually upward to the north. For twenty-five miles our route led over this rolling slope, sparsely grown with aspens and lodgepole pines, with copses of willow and alder and some patches of spruce, until a height of land was reached at 2,800 feet altitude. Beyond this divide the country slopes to the valley of the Halfway River, whose southwest branch was crossed a few miles above its confluence with the northwest branch (Fig. 10).

We were surprised to note that this southwest branch, which appears through a gap in the mountains to the westward, carried by far the larger part of the water. On the published maps this appears as a minor tributary, the northwest branch apparently being the more important. The significance of this observation will appear later.

Our course now followed the northwest branch of the Halfway to the mouth of Cypress Creek, which led us westward to its source in the mountains (Fig. 11). The northwest branch continues, apparently, parallel to the range.

¹⁰ At this juncture the courteous aid of the Revillon Frères Trading Company saved us serious delay, for the Beaver Indians of Hudson's Hope were all away on the hunting trail and the trading posts were closed for the summer.

On the Halfway River we struck and followed for some miles a trail which was located by Inspector Moodie of the Northwest Mounted Police in 1897, in the effort to discover an overland route to the Klondike by way of the Pelly River¹¹. Inspector Moodie, true to the traditions of the service, succeeded in reaching his goal after more than a year of hard and adventurous work, but the route was never a popular one. We found a few fragments of broken sledges and discarded cook-stoves as mute evidence of the failure of those treasure seekers who attempted to follow his lead, all of whom were forced to retreat or met a worse fate in the mountains. We found no indication of the trail having been used recently.

Following Cypress Creek, we passed through a notch between the hills into a rounded valley grown with willows and scrub birches (*Betula subulata*) and flanked by spruces and lodgepole pines. Thus we were led toward a conspicuous snow-flanked peak bearing S. 69° W. which marks the eastern summit of Laurier Pass. Like the eastern approach to Yellowhead Pass, the slope of this valley is so gradual that we would hardly have realized the altitude we were making without our aneroids. At the summit of the pass (5,300 feet) we made camp No. 34 in the last of the spruce scrub, which in all this region ceases quite abruptly at about 5,500 feet. Below this the first well-formed trees are found at about 5,000 feet, and from that point down to 4,000 feet they are stunted by the rigor of the climate, old trees with a diameter of 12 to 18 inches rarely exceeding 30 to 40 feet in height.

On the south side of Laurier Pass the snow peak above mentioned rises abruptly to about 7,000 feet. This is the highest peak visible on the eastern side of the range, and from it we obtained a fine view of the mountains to the north and westward. Because of its commanding location and convenient proximity to a roughly established base line in the valley, it was chosen as a principal observation point and called for identification, Laurier Peak.

The mountains are divided into two ranges by a valley perhaps twenty-five miles wide, containing two principal forks and several tributaries of a stream flowing to the south. The eastern range is composed largely of limestone and shale, in which springs are abundant even near the summits, being thus in marked contrast with the dry quartz rock of Mt. Selwyn. The mountains are, for the most part, rounded and not so high as those to the west. The

¹¹ J. D. Moodie: Edmonton to the Yukon. *Report of the North-West Mounted Police, 1898, Part II*, pp. 3-82.

western range is a rugged chain of serrated peaks, extending approximately N. 17° W. as far as the eye can reach. Among them, though partly hidden at this point by nearer mountains, is a sharp cone which was afterward identified as the Trident Peak, seen from Mt. Selwyn. Farther north are several conspicuous snow peaks. One of them bearing N. 24° W. is especially prominent because of its sharp outline and precipitous front, which, notwithstanding the fact that it towers above neighboring snow peaks, was entirely bare of snow in August, except for a round spot near the summit. This spot, like a single glistening eye, suggests the name Cyclops for this mountain. Its distance from Laurier Peak, as determined by cross bearings, is approximately 50 miles.

Still farther north and bearing N. 20° W. is another mighty peak, completely shrouded in perpetual snow. Beyond this the mountains stretch as far as the eye can reach, the last one visible bearing N. 17° W. This bearing represents approximately the trend of the rugged sierra which constitutes the main crest of the range.

Northeast of Trident Peak and east of the main sierra is another mountain bearing N. 53° W. from Laurier Peak, which, although not so high as the main range, is conspicuous because of a fair sized glacier on its eastern front. We approached later close to the base of this mountain, which marks the northern limit of our journey.

The descent from the first summit of Laurier Pass to the median valley is rapid. We dropped 1,000 feet in three and one-half miles, and 250 feet more brought us to the bottom of the valley, 9 miles above the main fork of the stream. We crossed the valley and made camp No. 35 on the western branch of the stream, which rises in an emerald green lake near the base of a sharp cone, which, because of its comparative isolation, is a conspicuous land mark.

From this camp we made a reconnaissance of a huge crescent-shaped basin guarded by rugged limestone peaks, estimated as 7,500 feet high, which culminate on the west in Trident Peak, whose altitude is not far from 8,000 feet (Fig. 12). Then we worked northward up the northwest branch of the stream to its source near the base of the glacier peak, later crossing a 6,500-foot saddle to the northeast branch (Fig. 13).

From one of the intervening mountains we obtained a view of Trident Peak, which exhibited the precise profile (though reversed and bearing S. 5° E.) that I had sketched from Mt. Selwyn, thus completing the identification.

We hoped to be able to press farther northward through the

median valley, but a succession of snow storms, beginning August 24th, seriously hampered us in our work among the peaks so that the available time was practically all expended in making the necessary biological collections. We were, therefore, compelled reluctantly to turn back.

We were informed later by a band of Indians that this valley could not be followed much farther. They said it was possible to travel in the winter with dogs, but it was a "bad place for horses."

We decided to return by a different route, following the stream

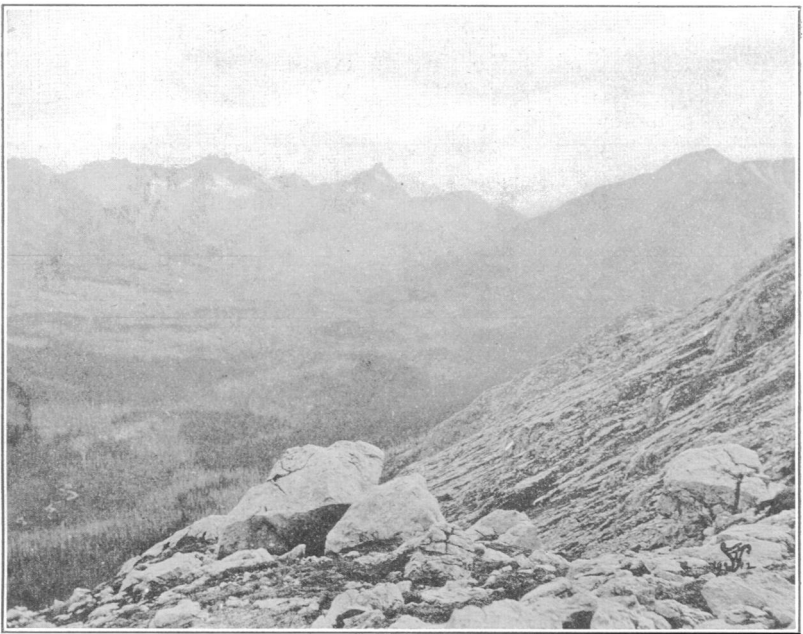


FIG. 12—Trident Peak (the sharp peak in the center) from a limestone mountain 6,300 feet high south of camp No. 35—looking S. 43° W. The two lateral shoulders are not visible from this angle.

in the median valley, if possible, to the Peace River. This stream appears on the map as the source of the Ottertail River, which enters the Peace River below the Parle Pas Rapids.

For twenty miles we proceeded without serious difficulty, traveling alternate days and using the intervening days to cut trail, but soon we became entangled in a mass of down timber which stretched in all directions as far as the eye could reach, so that five miles was a good day's travel. To add to our discomfort, the river swung

away from its southerly course and turned eastward, away from the mountains.

At this juncture, we had the good fortune to fall in with a band of Beaver Indians, returning from a hunt on the Nelson River. They frowned unpleasantly at the sight of our sheep and caribou heads, which they said were their sheep and their caribou. They were mollified, however, by gifts of tea and tobacco, and became quite communicative. They were amused by the white man's notion that the Peace River could be reached that way. To the south, they said, there was only a tangle of mountains and the stream we were following did not flow into the Ottetail, but made a big bend to the southeast, emptying into the Halfway River. The Ottetail had its source on the other side of Trident Peak.

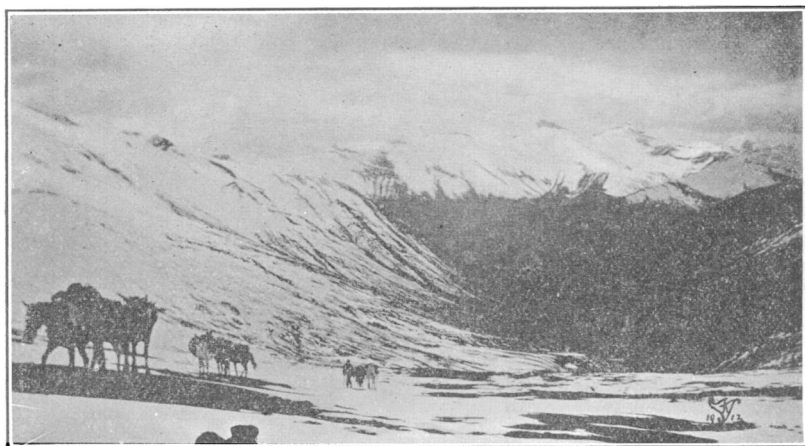


FIG. 13.—Crossing the divide (6,500 feet) between camps 36 and 37, looking west toward the main range. The highest peaks of the western sierra are hidden by nearer mountains.

Thus was explained the puzzle of where the southwest fork of the Halfway River gets its water. Viewed from below no adequate water-shed is disclosed beyond the notch, almost blocked by mountains, from which the stream issues; but by flowing around this barrier range, as the Indians said, and draining the interior basin, it obtains a water-shed quite sufficient to explain its large size.

The Indians had just cut a new trail into the valley where we met them, and we were thus enabled to cross the eastern range by a 4,800 foot pass and descend into the valley of Stone Creek (as the Indians called it in their own language) which led us easily to the Halfway River, and thus to Hudson's Hope.

Stone Creek heads in a valley not far from Laurier Peak, and apparently affords an easier route to the pass than the one we had followed along Cypress Creek. An old Indian trail follows this valley.

Peace River Valley below the Mountains. At Hudson's Hope horses and packers were left behind and we proceeded down the Peace River by canoe. Below this point the river is broad and placid, flowing with a fairly uniform current of five miles per hour, without obstruction and without serious rapids. It cuts its way through the plateau without much meandering, flowing between banks from 500 to 800 feet high, which completely conceal the surrounding country (Fig. 14).

In some places there are strips of bottom land a mile or so wide.

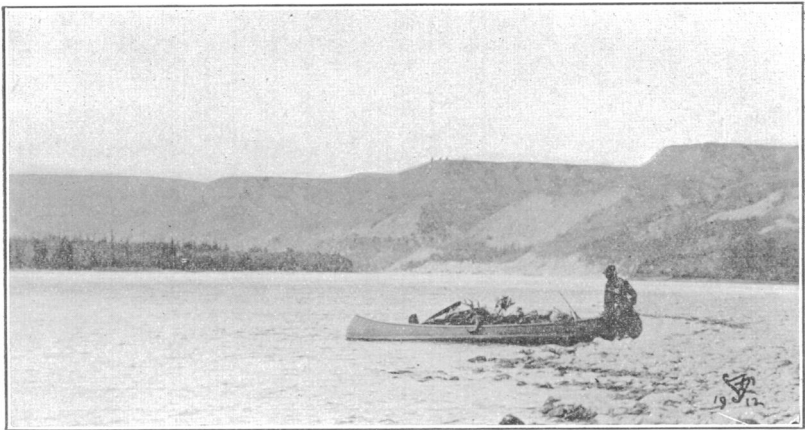


FIG. 14—A typical view of the Peace River, between Hudson's Hope and Fort St. John, showing the steep cut banks. The plateau level is about 800 feet above the river.

Two of these are occupied by the Hudson's Bay and Revillon stores at Fort St. John (Fig. 15) and Dunvegan, respectively. Both places are receiving the attention of boomers. One of the dealers in Edmonton had in his window a large relief map in many colors, illustrating Dunvegan as a fully equipped town, with several railroads, two or three bridges, electric light plants, etc. (Fig. 16); consequently, we expected to find here a thriving community. Imagine our surprise at seeing only the traditional flag pole surrounded by a few log houses of the Hudson's Bay and Revillon Companies, with a little group of Indian teepees (Fig. 17). We were informed, however, that some settlers had taken up land on

the plateau above. They had just suffered the loss of their hay through a terrific forest fire, through which we had been passing and continued to pass for three days.

These fires are the curse of the country. This one appeared to start in three different places simultaneously and is supposed to have been set by the Indians for the purpose of driving the game. At least a hundred miles of the plateau was swept clean, and the smoke of the conflagration followed us all the way to Lesser Slave Lake.

Dunvegan is typical of the numerous towns on paper that are springing up all over the country. The surveying of a townsite in the wilderness, under the peculiar land laws, is the signal for specu-

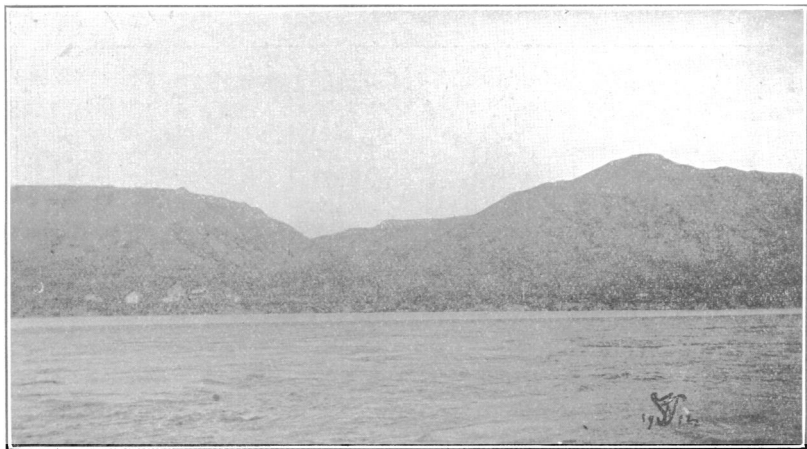


FIG. 15—Fort St. John on the Peace River, looking north, showing a break in the river bank.

lators to reap a profit from a confiding public. Some of these townsites will doubtlessly pay good returns, but in this region, as in other boom districts, such ventures are naturally highly speculative.

At Peace River Crossing we abandoned our canoe and proceeded overland to Lesser Slave Lake, where we took the Hudson's Bay Company's boat on its last trip out.

The plateau which we traversed is 1,000 feet above the Peace River. It is grown mainly with aspens and much of it has been burned. It appears to be fertile, although at this time of the year (late September) it was very dry and the only water available for camp use was found in a few stagnant, muddy pools, except where we crossed the streams flowing into Lesser Slave Lake. These

streams, however, were flowing freely, and near one of them we found a settler with a fine crop of oats.

Lesser Slave Lake occupies the center of a great alluvial bottom, which supports a most luxuriant growth of wild hay ("blue joint") standing sometimes almost as high as one's head (Fig. 18). We were informed that in the Grande Prairie region, west of the lake,

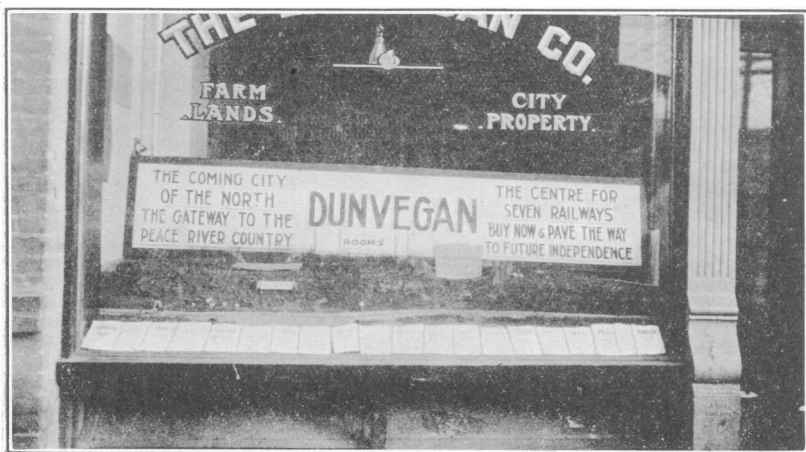


FIG. 16—Dunvegan—as seen from Edmonton.

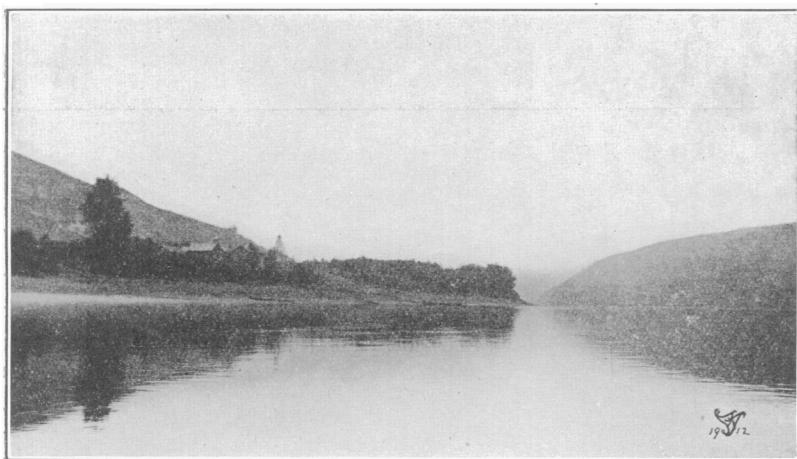


FIG. 17—Dunvegan—as seen from the Peace River.

numerous settlers were carrying on very successful agricultural work.

Economic Development. In the valley of the upper Fraser River, the development at present (1912) consists mainly in the building of the railroad. The steel is laid as far as Tête Jaune Cache, and the work of constructing the roadbed is in progress for a hundred miles or so farther.

Some settlement is taking place farther down the river, from Fort George up through the interior plateau, but not extending to the point where the mountains begin, just below the canyon. This

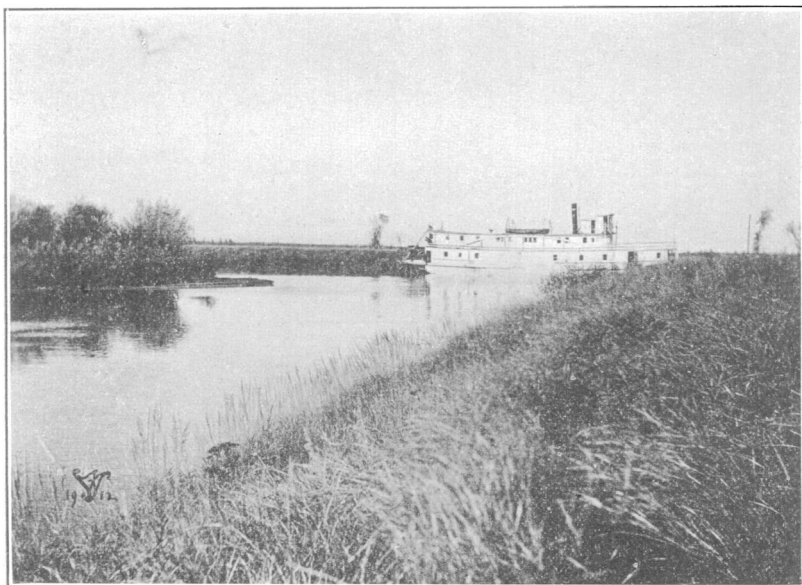


FIG. 18—The Slave River, below Lesser Slave Lake, meanders through a great alluvial basin which supports a luxuriant growth of wild hay. The many turns make navigation difficult.

settlement is being done mainly by squatters, who build a cabin and clear a little land, in anticipation of increasing values when the railroad is finished. This land appears to possess agricultural possibilities, though the mosquito pest is a severe handicap.

In the valley of the Crooked, Pack and Parsnip Rivers and in the Peace River valley as far as the canyon above Hudson's Hope, absolutely no sign of development was found, and no habitations were passed, except at the Hudson's Bay Post at Fort McLeod, where there is a little group of Sikanni Indian shacks. Much of

the upper part of this valley, near the river, is low and marshy and other parts are gravelly with shallow soil, though there are sections which may offer opportunities for settlement. At present, however, the region is too inaccessible to attract even the promoters, who are so active in the lower Peace River district.

The latter district is booming famously. In Edmonton everyone is talking of the immense possibilities of the great "north country," and people in considerable numbers are going into the country via Lesser Slave Lake. The railroad was completed this year as far as Athabaska Landing (Fig. 19), and it is projected ultimately to the Peace River and to Lake Athabaska.

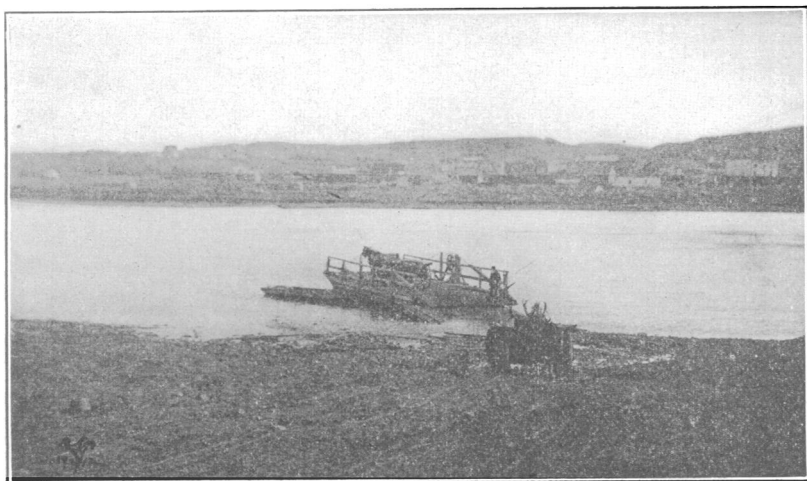


FIG. 19—Athabaska Landing, the northern terminus of a new railroad from Edmonton, and the gateway to the lower Peace River country.

The town of Grouard, at the head of Lesser Slave Lake, is developing rapidly in anticipation. Among the newest improvements are a frame hotel and a motion picture show, and other buildings are springing up like mushrooms. This is the natural gateway to the lower Peace River country, for which such great hopes are entertained.

At present, the real estate speculators are the most active of the boomers, but there is not a little bona-fide settlement going on. Mixed farming has been tried with considerable success on the plateau west of Lesser Slave Lake, especially in the Grande Prairie region, and some wheat is being raised. The optimists maintain that the lower Peace River valley will make a good wheat country,

but this remains to be demonstrated. Wheat appears to do well, provided it is not ruined by early frosts. The more conservative promoters think the future of the country lies in the direction of stock raising. The plateau region supports a fine growth of wild hay, which is said to be of excellent quality. On the eastern slope of the mountains, chinook winds moderate the climate, so that the Indians are able to winter their horses in the valleys without feeding, but in the plateau region winter feeding will undoubtedly be necessary.

Up to the present, the settlement in the Peace River valley is mainly below Peace River Crossing, though a very few settlers have begun to take up land up the river. Navigation is possible as far as Hudson's Hope, above which the river is effectually blocked by the canyon. The river bottom is fertile, and a variety of garden truck has been raised by the Hudson's Bay men at Dunvegan and Fort St. John, but the available land in the bottom is limited. It is on the plateau 500 to 800 feet above that any future settlers must rely. The steep character of the banks made it impracticable to investigate this plateau personally, so I cannot venture an opinion as to its possibilities.

In the Peace River valley colors of gold are to be found on the gravel bars, but seldom in paying quantities. The source of this supply has not been located, and the mountains are almost entirely unexplored. Mt. Selwyn is composed largely of quartz, which is auriferous, and on the Ominika River, a tributary of the Finlay, placer gold has been found in paying quantities.

Lignite and soft coal are quite widely distributed in the Peace River valley, and it is reported that a high grade of coal approaching anthracite has been found, though I was unable to confirm this very definitely.

If the present boom conditions continue, these and other resources of the country will doubtless be developed in the near future.

Profiles

Trident Peak



from Mt. Selwyn



from Laurier Pk.

great snow mtn.



from station N. of #33

Cyclops Peak



from Laurier Pk.



from station N. of #33

the most northerly peak visible bears N. 17° W.
marking the eastern edge of the main series
rounded peaks

